The Perception of Debugging

This survey investigates how software developers debug. Its results will be compared to TestRoots WatchDog data [1].

It takes 5 minutes to complete and is hassle-free. By entering your e-mail address at the end of the survey you can win one of the three €15 Amazon vouchers.

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BLINDED

* Required

Background information

1. **WatchDog User-ID (please do not change this value)** *

2. **Experience in software development** *
   Mark only one oval.
   - < 1 year
   - 1-2 years
   - 3-6 years
   - 7-10 years
   - > 10 years

3. **Programming languages you use** *
   Check all that apply.
   - Java
   - Python
   - PHP
   - C#
   - C++
   - C
   - Javascript
   - Objective-C
   - Swift
   - R
   - Other:

4. **Integrated Development Environment (IDE) you use or like most, which we will call 'your IDE' from now on** *
Mark only one oval.

- ◯ Eclipse
- ◯ Visual Studio
- ◯ Vim
- ◯ Xcode
- ◯ NetBeans
- ◯ Sublime Text
- ◯ IntelliJ
- ◯ Komodo
- ◯ Xamarin
- ◯ Emacs
- ◯ Other: _____

IDE-provided debugging infrastructure (1/3)

5. **Do you use the debugging infrastructure provided by your IDE?** *
Mark only one oval.

- ◯ Yes *After the last question in this section, skip to question 8.*
- ◯ No *After the last question in this section, skip to question 7.*
- ◯ My IDE does not have a debugger. *After the last question in this section, skip to question 11.*

6. **For debugging ...** *
Check all that apply.

- ☐ I use an external program (e.g. GDB).
- ☐ I use the IDE debugger.
- ☐ I use print statements.
- ☐ I examine the log files.
- ☐ I use additional other techniques.
- ☐ none of the above applies.
- ☐ Other: _____

IDE-provided debugging infrastructure (2/3)

7. **I do not debug in the IDE, because ...** *
   Check all that apply.

   - [ ] I use an external program that I find more effective/efficient.
   - [ ] print statements are more effective/efficient.
   - [ ] techniques other than print statements are more effective/efficient.
   - [ ] I don't know how to use it.
   - [ ] my program is impossible to debug.
   - [ ] I don't debug my programs.
   - [ ] Other: _____

Skip to question 11.

IDE-provided debugging infrastructure (3/3)

The purpose of this section is to get to know which of the debugging features provided by many IDEs you (don't) know. Moreover, this section aims to answer which of these features are actually used by developers in practice.

8. **Breakpoint types** *
   Mark only one oval per row.

	I don't know	I know	I know and I use
Line breakpoint			
Temporary line breakpoint			
Class prepare breakpoint			
Exception breakpoint			
Method breakpoint			
Field watchpoint			

9. **Breakpoint options** *
   Mark only one oval per row.

	I don't know	I know	I know and I use
Specifying a condition			
Specifying a hit/pass count			
Setting the suspend policy			

10. **Other debugging features** *
    Mark only one oval per row.

	I don't know	I know	I know and I use
Stepping through the code			
Inspecting variable values			
Inspecting the call stack			
Defining watches			
Evaluating expressions			
Modifying variable values at runtime			
Editing code at runtime (hot-swapping)			

Debugging using unit tests

11. **Do you write small unit tests to be able to reproduce bugs and start debugging?** *
Mark only one oval.

- Yes
- No

12. **Do you use unit tests to check your progress during the debugging process?** *
Mark only one oval.

- Yes
- No

13. **Do you use unit tests to verify the correctness of a possible bug fix?** *
Mark only one oval.

- Yes
- No

Final remarks

14. **"The best invention in debugging still was printf debugging." What is your opinion? If you want to share something else on debugging, feel free to use the answer field below.**

15. **If you are interested in winning a €15 voucher for Amazon, enter your e-mail address below. We might contact you for a (non-obligatory) follow-up interview.**